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EXAMINER

FERRIS, DERRICK W

ART UNIT

PAPER NUMBER

2663

DATE MAILED: 03/19/2003

11

Please find below and/or attached an Office communication concerning this application or proceeding.

11

Office Action Summary

Application No.

09/389,469

Applicant(s)

SAITO ET AL.

Examiner

Derrick W. Ferris

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 September 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. **Claims 1-15** as amended are still in consideration for this application. Applicant has amended claims 1 and 14.
2. Examiner does **not withdraw** the obviousness rejection to *Puri et al.* in view of *Wang et al.* Applicant has amended the claims to better recite “error resistance of each of the packet segments”. Based on applicant’s arguments it appears what at issue is selecting of an error correction scheme based on the “error resistance” for each of the packet segments. Specifically, would a person skilled in the art be motivated to modify the combined teachings of *Puri et al.* and *Wang et al.* to show that an error correction scheme is selected for each packet segment based on “error resistance”? *Puri et al.* provides a reasonable expectation of success for full-filling a need for an error correction method in general for transporting MPEG packets; *Puri et al.* present no specific method or scheme for error correction. *Wang et al.* attempts to satisfy the deficiency of an error correction method or scheme in general for MPEG packets by disclosing a list of possible error corrections methods and by applying a selected method to segments (i.e., each packet segment) of the output bit stream of an encoder [page 977, middle right column; pages 990-995]. *Wang et al.* in table 4 on page 994 summarizes three types of interactive error-concealment techniques although concludes in general that “*more emphasis should be placed at the system-level design and optimization where the encoding algorithm, transport protocol, and post processing method should be designed jointly to minimize the combined distortion due to both compression and transmission. In addition, an optimal system should adapt its source-coding algorithm and transport-control mechanism to the network conditions* [i.e., “error

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resistance”] *so that the best end-to-end service quality is achieved*” [page 995, middle left-hand column]. Thus examiner has presented a general case of prima facie obviousness. By way of further example, examiner notes that *Elaoud et al.* in “Adaptive Use of Error-Correcting Codes for Real-time Communication in Wireless Networks” supports this case of prima facie obviousness. *Elaoud et al.* discloses an adaptive method for error-correction for “error resistance” networks as defined by applicant in applicant’s specification on page 13, lines 1-8 for a network that is characterized as “high-bit-error rate, limited bandwidth, and intermittent connectivity” [page 548, lower left hand column] for transporting video services including MPEG [page 549, lower left hand column]. Emphasis is placed on the section entitled “Model of the Error-Recovery Scheme” on the right hand side of page 549 which concludes that “*In contrast, in this paper, we assume the sender [i.e., encoder] can use any one of a given set of error-correcting codes, ..., in each of its transmissions”*. Examiner notes that the error-correction codes in the reference are based on the characteristics of the network (i.e., the “error resistance”).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1-15** are rejected under 35 U.S.C. 103(a) as being unpatentable over “MPEG-4: An Object-based Multimedia Coding Standard supporting Mobile Applications” by Puri et al.

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(“*Puri*”) in view of “Error Correction and Concealment for Video Communication: A Review” by Wang et al. (“*Wang*”).

As to **claim 1 and claim 14**, Examiner notes protocol encapsulation and multiplexing in general is well known in the art such that “dividing a packet to be transmitted into segments to form a plurality of packet segments” is well known in the art prior to applicant’s invention. By way of example, *Puri* discloses segmenting and encapsulating packets (using a broad but reasonable interpretation of the word “packet”) in figure 28 on page 45. For example, the reference shows that an IP Packet can be un-encapsulated into its respective Access Units (i.e., divided into a plurality of packet segments – each packet segment corresponding to an Access Unit) and then re-encapsulated into another (preferably smaller) packet segments (e.g., a FlexMux packet using a simple, single-object PDU shown in figure 29, corresponding to either an ALL2 ATM packet or H.223 packet). With respect to error correction, *Puri* discloses in section 4.4.7 (page 30) that:

“Due to the channel specific nature of the degree and type of error correction needed, MPEG-4 is not likely to recommend a specific error correction method, but leave it up to the chosen data transport layer to implement the needed technique. Further, error concealment strategies although encouraged are not standardized by MPEG-4; perhaps the work done on MPEG-2 can be useful.”
[page 30]

As such, the reference provides motivation to use error correction but does not elaborate on how said error correction is to be applied in the system (only that it could be applied to the data transport layer referred to by *Puri* as the Transport Multiplexing or “TransMux” layer).

Wang presents various error control and concealment schemes. In general, *Wang* presents two categories for error detection (and correction or concealment): those performed at the transport coder/decoder and those at the video decoder [page 977]. Hence presented by *Wang* is various schemes for error detection such that in using this reference in combination, a prima facie case of obviousness can be established such that it would have been obvious for a skilled artisan prior to applicant's invention to select one (or more) of the error detection schemes proposed and apply this error correction scheme at the transport layer (i.e., the Transport or Multiplexing or "TransMux" layer as disclosed by *Puri*) based on characteristics of the network (i.e., the "error resistance").

Both references disclose network communication using video in general. Specifically, in providing a reference for MPEG-4, *Puri* notes error correction schemes can be applied, such as those disclosed by *Wang*. Hence examiner notes that it would have been obvious to combine the subject matter as a whole for both references.

As to **claim 2 and claim 15**, noted in the rejection for claim 1 is transmitting a packet such that it would have been obvious to a skilled artisan to do the reverse for receiving a packet prior to applicant's invention. Specifically, *Puri* discloses transmitting and receiving packets via the Transport Multiplexing layer or "TransMux" layer as disclosed by *Puri*. Noted in the *Puri* reference is that error correction schemes can be applied to this layer. *Wang* provides various types of error correction schemes that can be applied to this layer. Furthermore, examiner notes that it would have been further obvious to apply at least one error correction scheme (i.e., select an error correction scheme) at the decoder (i.e. the receiving side). For example, *Wang* notes that

"Another method for error detection at the transport level is to use FEC. In this method, error-correction encoding is applied to segments [i.e., the application units as referred to by Puri] of the output bit stream of the encoder. At the decoder, error-correction decoding is employed to detect and possible correct some bit errors." [page 977]

In other words, examiner notes that when receiving a packet segment, should a certain type of error correction have been applied to said received packet segment, then based on the predetermined structure of the packet, the information of the packet can then be applied along with the error correction method to see if any errors exist.

As to **claims 5 and 6**, in addition to the reasoning presented in the rejections for claims 1 and 2 respectively, *Wang* goes on to further illustrate (in reference to the FEC example mentioned previously in the rejection for claim 2) that H.223 uses FEC for both the multiplex packet header and the payload to detect errors in the header and the payload, respectively (i.e., using an error correction scheme based on information in a field, in this case an 18-bit FEC code of 493 bits for error detection and correction) [*Wang*, page 977].

As to **claims 3, 4, 7 and 8**, noted by *Puri* is support for the H.245 protocol in that the H.245 protocol is used as a control protocol for capability negotiation [*Puri* page 4]. Noted specifically is that this protocol can be used with H.223 packets for error correction [*Puri* page 6]. Thus examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to use the H.245 protocol to negotiate the error correction scheme prior to sending the packets as is known by a skilled artisan.

As to **claims 9-13**, noted in *Wang* is providing error correction for the header, payload and/or both [page 977]. As such, examiner notes that it would have been

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obvious to use a selection scheme that encompassed a header, payload or both as is well known in the art. Such headers could also include a port number as well for a particular application.

Conclusion

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derrick W. Ferris whose telephone number is (703) 305-4225. The examiner can normally be reached on M-F 9 A.M. - 4:30 P.M. E.S.T.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (703) 308-5340. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 305-3900.

Derrick W. Ferris
Examiner
Art Unit 2663

DWF 
March 12, 2003



MELVIN MARCELO
PRIMARY EXAMINER